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A COMPARISON OF REINFORCER ASSESSMENT METHODS: THE UTILITY OF VERBAL AND PICTORIAL CHOICE PROCEDURES

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We compared three methods of stimulus preference assessment for verbal children and specifically evaluated the utility of a verbal choice procedure for assessing relative reinforcer value. Using a token system, relative preference for five categories of reinforcers, representing 15 different stimuli, was assessed by three methods: a reinforcer survey, a verbal stimulus-choice questionnaire, and a pictorial stimulus-choice procedure. Results showed that the verbal and pictorial stimulus-choice assessments accurately identified high- and low-preference categories for 3 of 4 participants. Survey results alone often rated multiple categories as high preference, were less likely to identify low-preference categories, and were less likely to correspond with the results of a reinforcer assessment.

DESCRIPTORS: reinforcer assessment, surveys, attention deficit hyperactivity disorder, preferences

The identification of reinforcers is critical to the development of effective behavioral treatments. However, little attention has been directed to the development of assessment methods for identifying reinforcers for verbal children. There appears to be an implicit assumption that children with average skills can accurately name their own reinforcers. In practice, reinforcers are selected most often on the basis of verbal statements of preference. Methods range from direct questions about preferences (e.g., "what is your favorite?" or "what do you like?"), to surveys in which children are asked to rate common reinforcers on a Likert-type scale (e.g., Martin & Pear, 1992). Although widely used, the utility of verbal assessments for identifying reinforcers remains largely unknown.

One reason to question the accuracy of children's self-reports regarding potential reinforcers is that correspondence between children's verbal self-reports and subsequent behavior is often poor (e.g., Guevremont, Osnes, & Stokes, 1986; Risley & Hart, 1968). Poor correspondence could make verbal reinforcer-assessment procedures particularly susceptible to high error rates.

One alternative to self-report measures is to identify reinforcers on the basis of choice responses (Fisher et al., 1992; Mason, McGee, Farmer-Dougan, & Risley, 1989). Choosing between concurrently available alternatives may be considered a fundamental behavioral definition of preference (Schwartz & Baer, 1991). However, most current reinforcer-assessment procedures are based on methods that allow the reporting of multiple preferences with no choice or discrimination requirements.

In a stimulus-choice format, two stimuli are presented simultaneously with an instruction to pick only one. A stimulus-choice format is thought to more closely approximate a natural environment in which an individual must choose between concurrently available alternatives. A stimulus-choice format also provides a specific reference to available stimuli and requires an ac-

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tive choice or discrimination. Fisher et al. (1992) found that the stimulus-choice format better indicated which stimuli would function as potent reinforcers when compared to a procedure in which stimuli were presented one at a time. The use of a stimulus-choice presentation format also may enhance the utility of verbal reinforcer assessments.

In a preliminary comparison of different types of reinforcer assessment for children with attention deficit hyperactivity disorder (ADHD), Northup, Jones, Broussard, and George (1995) reported that a verbal stimulus-choice procedure and direct observation of free play were similarly effective for identifying preferred toys, and both were more effective than a child nomination procedure. However, that investigation was limited in that (a) stimuli were restricted to a small number of items from a single category (toys), (b) child nomination consisted of a single statement of preference (i.e., "which is your favorite?"), and (c) baseline and repeated treatment conditions were not conducted.

The purpose of the present investigation was to further evaluate the utility of a verbal stimulus-choice procedure for identifying reinforcers for children with ADHD. Using a token coupon system, relative preference for 15 stimuli from five categories was assessed by three methods: a reinforcer survey, a verbal stimulus-choice questionnaire, and a pictorial stimulus-choice procedure. The choice procedures were similar to those described by Fisher et al. (1992). The stimuli from each of the five categories were then presented contingently for completing academic work in a multielement design in order to identify actual reinforcers. The results of the reinforcer assessment were compared with the results of each stimulus preference assessment.

METHOD

Participants and Setting

Participants were 2 boys and 2 girls between the ages of 6 and 9 years who attended a summer program for children diagnosed with ADHD. The program was conducted each weekday between 8:30 a.m. and 11:30 a.m. for 3 weeks in a classroom at a University Laboratory School. Each child met criterion for diagnosis of ADHD (American Psychiatric Association, 1987) based on a parent interview, an ADHD rating scale, and a score at least two standard deviations above the mean on a domain of attention or hyperactivity on at least one other standardized parent rating scale (e.g., Child Behavior Checklist). All participants were developmentally normal and of at least average intellectual functioning. One child (Neil) had previously been diagnosed with a specific learning disability; otherwise, no participant met any other diagnostic criteria. Three of the 4 participants had been receiving medication (Ritalin®) prior to participation in the program. With parents' and physician's approval, medication was discontinued during this study.

Response Definitions and Measurement

Dependent variable. The dependent variable was the number of coded squares on a coding task (similar to the coding subtest on the Wechsler Intelligence Scale for Children III). The coding data sheet consisted of a worksheet containing 98 squares with a letter in the top half of each square and a blank in the bottom half. The task consisted of placing a number in the bottom half of the square that corresponded to the letter in the top half. A key at the top of the page showed each letter and corresponding number. Prior academic assessment indicated that this would be an easy task for each participant, and each participant stated that it was "easy" and "boring." Accuracy of coding was not required to obtain token coupons.

The total number of squares coded (i.e., containing a complete number) were tallied for each session for each child. Two authors independently scored 30% of all worksheets that were selected randomly from all children and all experimental phases. Agreement was 100%. Two authors also independently scored 20% of each stimulus preference assessment. Interscorer agreement on percentage scores was 100%.

Stimuli. Fifteen stimuli, organized into five categories of potential reinforcers, were initially identified for each participant on the basis of survey ratings and subsequent random selection. The survey was based on the Child Reinforcement Survey (CRS; Fantuzzo, Rohrbeck, Hightower, & Work, 1991) but was modified slightly for this study. The specific items on the CRS were selected from a compilation of potential reinforcers listed in widely used textbooks on behavior analysis (e.g., Sulzer-Azaroff & Mayer, 1977) and subsequent ratings by experienced teachers of appropriateness for use in the classroom (Fantuzzo et al., 1991). Thus, the CRS provided a pool of specific stimuli that were considered to be representative of generally accessible and acceptable classroom reinforcers.

The CRS includes 36 rewards organized into four categories (nine per category): (a) edible items (e.g., fruit, popcorn), (b) tangible items (e.g., certificates, stickers), (c) activities (e.g., art projects, computer games), and (d) social attention (e.g., teacher or friend says "good job," or "I like that"). For this study, a category of negative reinforcement (escape) was added to the survey. Negative reinforcement was presented on the survey as "Get out of . . ." (e.g., math, reading). A complete list of all specific items is available from the authors upon request. Children rated their preference for each item as *not at all, a little,* or *a lot.*

Control category. A control category was developed by combining one randomly selected item from each of the five categories that was rated *not at all* on the survey.

Token coupon system. Six coupons of different colors were made to represent each of the five categories of potential reinforcers and a control category (e.g., yellow for edible items, red for attention, etc.). A symbol that was considered to be representative of the general category was also placed on each coupon (e.g., a stick figure running represented activities). For each participant, the back-up reinforcers for each coupon were three randomly selected items from each corresponding category that were rated *a lot* on the child's reinforcer survey. These same three stimuli were used in all subsequent assessments.

Token coupons representing categories of stimuli were used for three reasons: (a) The three individual stimuli within each general category provided a variety of potential reinforcers for each earned coupon (Egel, 1981), (b) coupons representing five different categories provided variety across different types of reinforcers (Pace, Ivancic, Edwards, Iwata, & Page, 1985), and (c) it was hypothesized that preferences for categories of stimuli would be more stable than preferences for individual items. The specific categories were determined on the basis of structural characteristics (e.g., edible items, etc.) and may be of some heuristic value; however, there was no assumption of equivalent value across individual items within a category.

Token coupons could be exchanged for the designated back-up reinforcers upon request at any time, except during other brief (10-min) experimental sessions. Students cashed in coupons by raising their hands and making an appropriate request. All earned coupons were kept in individual mailboxes in the classroom and, upon request, the students collected their coupons for immediate exchange. Because students were routinely engaged in the same academic activities at

all times throughout the morning (except for a 15-min snack period), opportunities to use escape coupons were also continuously available. However, because some activities occurred later than others (e.g., math typically occurred before reading), there could have been a greater delay to some escape opportunities. All coupons had to be exchanged by the end of the morning academic activities (approximately 11:00 a.m.) so that all coupons were earned and exchanged on the same day.

Edible items, tangible items, and attention were provided on a 1:1 ratio. That is, one coupon could be exchanged for one edible item, one tangible item, or one statement of attention. Activities and escape were time based; each coupon was worth 2 min.

Phase 1

Stimulus Preference Assessment

Survey. The modified child reinforcement survey was administered verbally to each child. The survey was introduced with the following instruction (paraphrased from Fantuzzo et al., 1991):

> I am going to name some things that kids sometimes get in school. I want to know how much you like each of these things. After I name each thing, you tell me if you like it a little, a lot, or not at all.

Each of the nine stimuli for the five categories were presented verbally, and ratings were recorded for each stimulus item. Rankings were given the values of 0, *not at all*; 1, *a little*; and 2, *a lot*; for a total maximum score of 18 for each category. A percentage score was calculated for each category by dividing the summed score of the rankings by the total possible score for each category. Categories with a score of 75% or greater were considered to be high preference.

Verbal stimulus choice. A questionnaire was constructed to assess each child's preferences for the five categories of stimuli (i.e., activity, attention, edible items, escape, and tangible items). Ten questions were created so that each category was compared once with every other category. When a category (e.g., edible items) was presented in a question, three stimuli from that category were included as exemplars (e.g., chips, cookies, and popcorn). The same three stimuli were always used. The questions were presented in the format, "Would you rather [e.g., get things to eat, like chips, cookies, popcorn] or [e.g., get to do things, like art projects, play computer games, or go to the library]?" The questionnaire was introduced with the statement, "Which would you do a lot of hard work to get?" The order in which each category was presented in the pair was counterbalanced. Categories were ranked on the basis of the frequency of the child's selections, and a percentage score was calculated by dividing the number of times a category was chosen by the number of times it was presented as an alternative (four). Categories with a score of 75% or greater (three or four choices) were considered to be high preference.

Pictorial stimulus choice. The pictorial stimulus choice was conducted in a manner identical to the verbal stimulus choice except that the token coupons for each category of reinforcers were presented in pairs, and the child was asked to pick one rather than to provide a verbal response to the questionnaire. The coupons represented the same stimuli for each category as in the verbal stimulus choice. Prior to the assessment the child was asked to state the specific stimuli that each coupon could be exchanged for. The child was seated at a table across from an examiner, and two coupons were simultaneously placed directly in front of the child with an instruction to "pick just one." The coupons were presented in the same pairs and same sequence as were the categories during the verbal stimulus choice. That is,

all combinations were presented for a total of 10 trials, with each category presented as an alternative four times. A percentage score and high and low preferences were determined as described for the verbal stimulus choice.

The survey was administered first. The verbal and pictorial stimulus-choice conditions were then administered in a random order across participants.

Phase 2

Reinforcer Assessment

Baseline. During baseline, the child was seated at a table with a coding worksheet across from an examiner. The coding task was explained, and each child was given the instruction, "You can do as much as you want, as little as you want, or none at all. We will stop if you don't do any for 2 minutes." The session lasted 5 min or until the child did no coding for 2 min. A 2-min delay to session termination was used to insure that the child was not just momentarily distracted.

Reinforcer assessment. Each of the five coupons was made available, contingent on completed coding, once per session in a multielement design (Sidman, 1960). First, one of the five types of coupons was placed above the worksheet and directly in front of the child. Each child was given the following instructions:

> You can earn as many coupons as you want for doing coding. You will have a chance to earn all of the coupons. You can do as much as you want, as little as you want, or none at all. We will stop and go on to another coupon if you don't do any for 2 minutes or if you say, "I'm done."

Subsequently, the next coupon was placed above the worksheet until each of the five coupons and the control coupon had been presented. Thus, six trials were conducted per session, each associated with the opportunity to earn one of the different coupons. Each trial ended when the student said "done" or when no coding was completed for 2 min; otherwise, he or she could work indefinitely and earn an unlimited number of coupons. A new trial, associated with a different coupon, immediately followed each preceding one until all six coupons were presented. Coupons were presented in a random order.

The criterion number of squares required to earn each coupon was determined individually based on the average number of squares completed per minute during baseline. The number of squares required was 18 for Susan, 15 for Gail, 6 for Neil, and 9 for Jeremy. Each participant was further instructed that, when a certain number of squares were completed, he or she could pick up a coupon. The criterion number of squares was marked on each worksheet, and no further prompting was needed for the child to take the coupon. The child kept all coupons that were earned in his or her mailbox and exchanged them as described above.

Phase 3

Following the completion of all reinforcer assessments, each of the three stimulus preference assessments were again completed in a manner identical to those described in Phase 1. The second administration occurred approximately 10 days later. The purposes of the readministration of all preference assessments were (a) to evaluate the stability of the children's preferences across a short period of time and (b) to evaluate the possible influence of repeated exposure to the various stimuli and familiarity with the assessment procedures.

RESULTS

Stimulus Preference Assessment

Figure 1 shows the results of each of the stimulus preference assessments for each

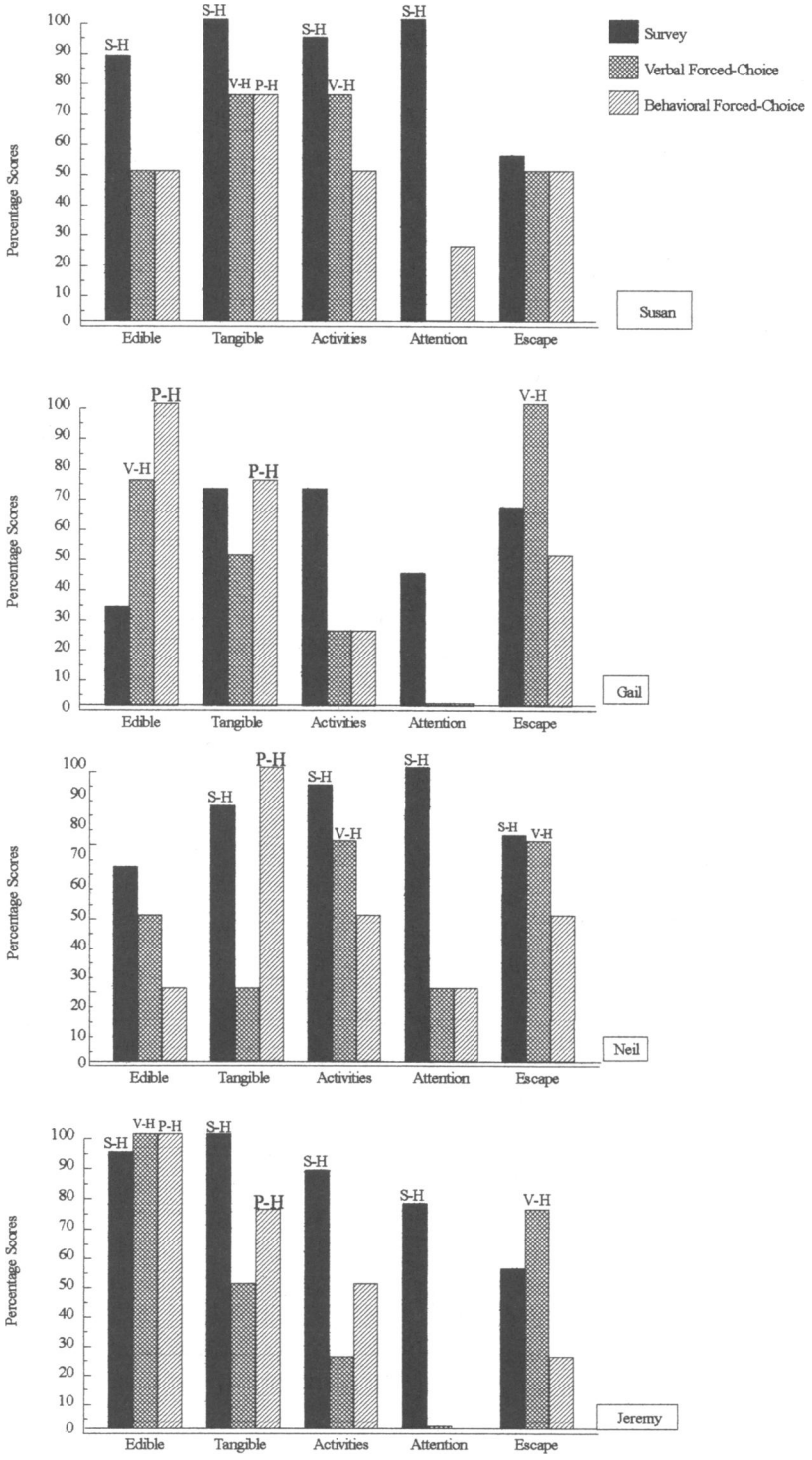

Figure 1. Percentage scores for each category of potential reinforcers for the survey (S-H), verbal stimulus-choice assessment (V-H), and pictorial stimulus-choice assessment (P-H) for each participant.

child during Phase 1. Overall, the verbal and pictorial stimulus-choice assessments were more likely than the survey to identify distinctly different high and low preferences. The survey was substantially more likely to identify multiple categories as high preference and less likely to identify low-preference categories.

Reinforcer Assessment

Figure 2 shows the results of the baseline and reinforcer assessment sessions. The results are presented as the cumulative number of coding squares completed across sessions for each baseline and reinforcer assessment condition. Clear reinforcement effects were demonstrated for 3 of the 4 participants for at least one of the coupons. In addition, distinct high- and low-preference categories were identified for 3 of the 4 children. For 1 child (Neil), there was no substantial difference in the number of coding squares completed for any of the conditions, including the control condition.

For Susan, edible items, tangible items, activities, and attention all were identified as high preference by the survey. In comparison, the verbal stimulus-choice assessment identified tangible items and activities as high preference, and the pictorial stimulus-choice identified only tangible items as high preference. In Phase 2, both the coupons for edible and tangible items were associated with a substantial increase in coding. Across sessions, Susan completed a total of 918 squares for coupons for edible items and 468 squares for coupons for the tangible items. Coupons for activity and escape were associated with a small increase in coding overall (120 and 90 squares, respectively) but did not maintain increases in coding across all five sessions. Attention was associated with an increase in coding in only two sessions and for a total of only 36 squares coded across all five sessions. Susan completed no coding for the control coupon. During baseline, Susan completed some coding during each of the first four initial sessions, but no coding occurred during the last two initial baseline sessions or during any of the return-to-baseline sessions.

For Gail, the survey did not identify any coupons as being high preference. The verbal stimulus choice identified edible items and escape as high preference, and the pictorial stimulus choice identified edible and tangible items as high preference. Coupons for edible items were associated with a substantial increase in coding during the reinforcer assessment. Across sessions, the total number of squares coded for edible items was 540. All other coupons, including the control, were associated with small increases in coding. Gail completed some coding during the first four initial baseline sessions, but no coding occurred during the last two initial baseline sessions or during any of the return-to-baseline sessions.

For Neil, the survey identified tangible items, activities, and attention as high preference. The verbal stimulus choice identified activities and escape, and the pictorial stimulus choice identified only tangible items as high preference. The coupons for escape and edible and tangible items all were associated with an identical increase in coding during each session. Across sessions, Neil completed a total of 114 squares for each of the coupons. Similarly, he completed the same number each session for a total of 96 squares for each of the activity, attention, and control coupons. Neil completed some coding during the first three initial baseline sessions, but no coding occurred during the last two initial baseline sessions or during any of the return-to-baseline sessions.

For Jeremy, the survey identified edible items, tangible items, activities, and attention as high preference. The verbal stimulus choice identified edible items and escape, and the pictorial stimulus choice identified edible and tangible items as high preference.

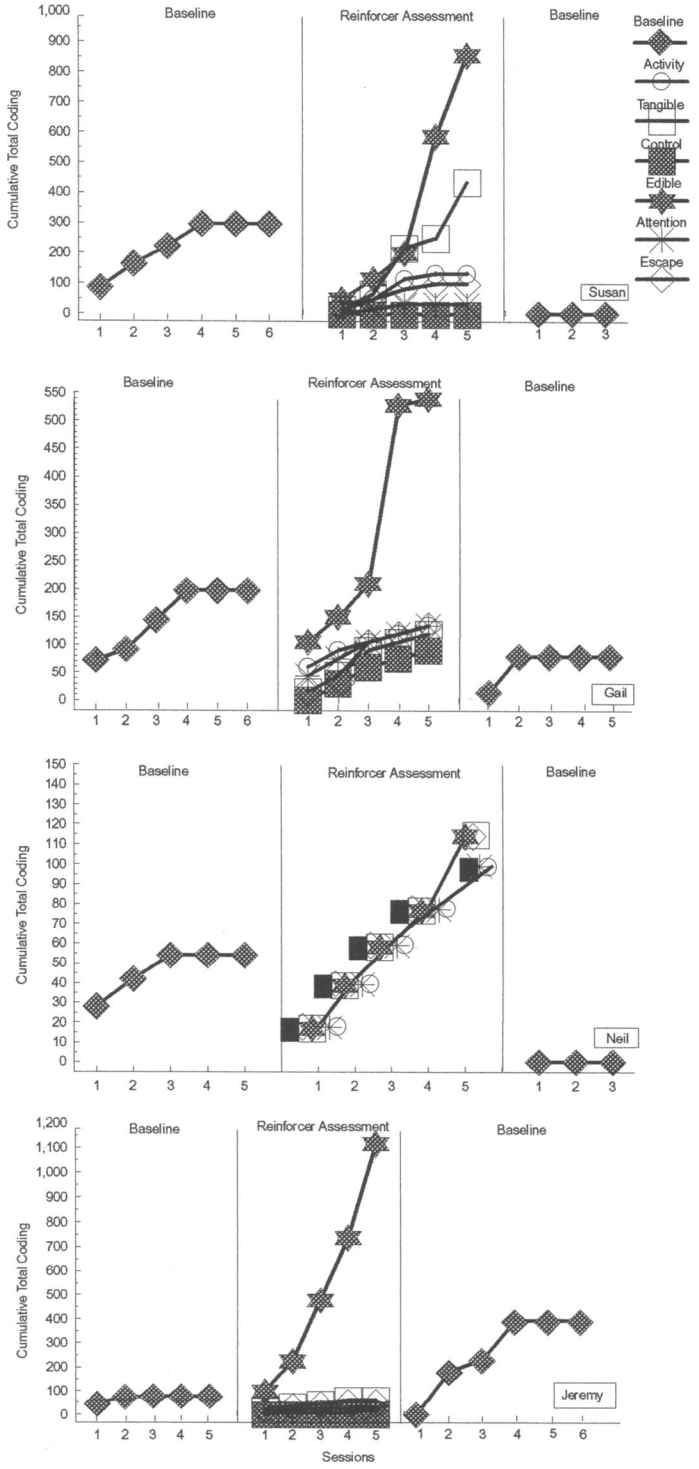

Figure 2. Cumulative number of coding squares completed during baseline and the alternating reinforcers conditions.

Table 1
Comparisons of the Results of the Preference Assessments with the Results of the Reinforcer Assessments

	True positives	True negatives	False positives	False negatives	Total accuracy
Pictorial choice	3	13	3	1	80%
Verbal choice	3	11	5	1	70%
Survey	3	8	8	1	55%

During the reinforcer assessment, the coupons for edible items were associated with a substantial increase in coding. Across sessions, Jeremy coded a total of 1,107 squares for edible items. All other coupons resulted in only a slight increase in coding overall and did not maintain coding across sessions. Jeremy completed no coding for the control coupon. During baseline, Jeremy completed some coding during the first two sessions, but no coding occurred during the last three sessions. A similar pattern of behavior occurred when baseline was reinstated.

Table 1 shows the overall accuracy of each preference assessment for identifying reinforcers when compared to the results of the reinforcer assessment. The coupons that were associated with a clear and substantial increase in coding during the reinforcer assessment were identified for each of the 3 participants who displayed distinct high and low responding. A stimulus category was considered to show clear reinforcement effects if the cumulative total of coding associated with the category was (a) higher than during baseline and (b) higher than coding associated with the control coupon.

For Susan, identified reinforcers were the coupons for edible and tangible items. Only the coupons for edible items were identified as a reinforcer for Gail and Jeremy. No categories showed clear reinforcement effects for Neil, because there was no substantial difference between the amount of coding completed for any of the coupons and the control condition. The results of each stimulus preference assessment were then compared to the actual reinforcers for four possible outcomes: (a) True positives were categories of stimuli (e.g., attention) that had been identified as high preference during Phase 1 and that functioned as reinforcers in Phase 2, (b) false positives were categories that had been identified as high preference but that did not function as reinforcers, (c) true negatives were categories that had been identified as low preference and that did not function as reinforcers, and (d) false negatives were categories that had been identified as low preference but that did function as reinforcers. Total accuracy was calculated as the sum of true positives and true negatives divided by the total of all positives and negatives (20). Total accuracy was 55% for the survey, 70% for the verbal stimulus choice, and 80% for the pictorial stimulus choice.

Total accuracy was also calculated as described above for the second administration of each preference assessment. Total accuracy was 55% for the survey, 80% for the verbal stimulus choice, and 80% for the pictorial stimulus choice.

Percentage agreement was also calculated between the first and second administrations for each of the stimulus preference assessments. Percentage agreement was calculated as exact agreement for high and low preference for each category of reinforcers across all participants divided by agreements plus disagreements and multiplied by 100%. Percentage agreement was 65% for the survey, 60% for the verbal stimulus choice, and 80% for the pictorial stimulus choice.

DISCUSSION

The results of this study contribute to the existing literature on reinforcer assessment in two ways. First, the results suggest that survey results alone may not accurately differentiate between high and low reinforcer

preferences for verbal children. Survey results alone may be particularly susceptible to false positive results and may not be sufficient for determining relative reinforcer value. Second, the addition of a verbal or pictorial choice assessment enhanced the likelihood of differentiating high and low preferences and produced results that were more likely to correspond with the subsequent reinforcer assessment. Overall, the results suggested that asking children only to name their own preferences may not be sufficient for identifying potent reinforcers, even if the questions are based on a structured survey.

The generally positive findings for the verbal stimulus-choice procedure replicate those of Northup et al. (1995) and are consistent with Bernstein and Michael's (1990) suggestion that the accuracy of verbal assessments can be enhanced if attention is paid to the response format and the nature and structure of the specific questions. In addition, the verbal format was efficient, because all combinations of the five categories were administered in 2 to 3 min. As used in this investigation, the pictorial stimulus choice was also reasonably efficient, in that it was typically conducted in approximately 5 min.

Two procedural aspects of this study may be noteworthy. First, we included a category of negative reinforcement in all assessments. It seems unlikely that most children would verbally nominate negative reinforcers as being preferred when the child is simply asked what he or she likes. Although substantial effects were not demonstrated for negative reinforcement in this study, it is probable that this category could be more potent for many children in other situations. One potential reason for the lack of a negative reinforcement effect is that children are less likely to have a history of exchanging points, tokens, or other secondary reinforcers for negative reinforcement (e.g., exchanging points to escape a math session). Thus, it is possible that items in the escape category were functional reinforcers but that the coupon representing that category was not a functional secondary reinforcer. Another potential reason is that there may have been a greater delay between when coupons were earned and when they were exchanged for some items in the escape category than for items in the other categories.

Second, we assessed preference for categories of reinforcers rather than for specific stimuli. Categories with multiple individual items were included primarily to provide a variety of potential reinforcers and to increase the efficiency of the preference assessments. In addition, it is possible that categories of reinforcer preferences may be more stable or durable as reinforcers than the specific stimuli within a category. For the coupons identified as reinforcers in this study, the three individual stimuli selected by each child for coupon exchange varied frequently within a category, although the category continued to be associated with the largest increase in task completion. However, the use of categories could obscure potent (or weak) individual stimuli. That is, it remains unknown whether all items in a category are reinforcers or whether only one or two are highly preferred. It is also possible that potent individual stimuli may become less so as a result of grouping with other less preferred items (or vice versa). Further investigation of the utility of categories of reinforcers for stimulus preference assessments may be indicated.

The undifferentiated results for Neil are noteworthy and suggest several possible explanations. First, his results might be explained as an instance of rule-governed behavior (Catania, 1992). For example, Neil earned the same number of all coupons during the first four sessions. This type of performance would be consistent with a self-generated rule, such as to earn two of everything. Second, it is possible that the coupons themselves acquired some value independent

of the specific back-up reinforcers associated with each type of coupon.

A number of limitations of the investigation warrant discussion. The verbal and pictorial choice assessments were similar procedurally and both provided only symbolic representation of actual stimuli. However, the differences in results suggest potentially important procedural differences between the two that further enhanced the accuracy of the pictorial procedure. It is possible that the physical representation, even if symbolic, may be more salient to children than a verbal statement alone.

Because the survey was always administered first, there is a possibility that prior experience with the survey may have enhanced the accuracy of subsequent reporting. The results of the reinforcer assessment for the control coupon also suggest that the survey may have been useful for eliminating items rated *not at all* from subsequent assessment and thus enhanced the accuracy of the preference assessments. Nevertheless, the stimuli that were identified by the survey as high preference frequently did not increase responding and resulted in a relatively high number of false positives. In addition, a second administration of the survey following frequent exposure to the specific stimuli did not enhance its accuracy. Further investigations of verbal preference assessments might include items selected on a basis that is independent of self-report (e.g., parent or teacher nomination).

Because coupons were presented in a rapidly alternating multielement design, it also is possible that sequence effects could have occurred during the reinforcer assessment. It is unknown whether receiving a coupon for one category may have affected responding for subsequent coupons. However, randomization of the order of presentation and the availability of all coupons during a session may have mitigated any inadvertent effects. For 3 of the 4 participants, the most potent reinforcer produced consistent effects across all sessions.

The present results are consistent with other recent findings that have demonstrated choice procedures to be a more sensitive measure of preference than traditional approach or questionnaire methods. Fisher et al. (1992) reported that a stimulus-choice procedure more accurately identified reinforcers than did a measure of approach behavior for individuals with severe disabilities. Reid and Parsons (1995) reported that a choice procedure was a more sensitive measure of the acceptability of a staff training procedure than was a traditional questionnaire based on a 7-point Likert scale. The current results for children with a diagnosis of ADHD provide a striking degree of correspondence across a distinct population.

Overall, the results of the present study demonstrated some limitations of reinforcer identification procedures that rely on verbal report and emphasize the need for further development of alternative methods. Although both the verbal and the pictorial choice procedures increased the accuracy of the stimulus preference assessments, both also had a degree of error. Thus, further evaluation of the conditions under which verbal assessments correspond to behavioral reinforcer assessments is warranted.

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STUDY QUESTIONS

1. In the Introduction, the authors discuss the difference between children's verbal statements of *preference* versus their actual *choices.* These terms are often used interchangeably; how were they operationalized in the present study?
2. Describe the three preference assessment methods that were compared in the first part of the study.
3. What general results were obtained from the comparison of assessment methods?
4. Aside from method of presentation (i.e., items presented singly or in named or pictorial pairs), what other differences among the methods might have affected the results of the preference assessment?
5. In the second part of the study, the "reinforcing value" of the five stimulus categories was evaluated. Describe the experimental task and the design used in this evaluation.
6. What results were obtained when response measures on the experimental task during the different reinforcement conditions were compared with predictions from the initial preference assessment?
7. The pictorial choice method was found to be slightly more accurate than the verbal choice method in predicting reinforcement effects. In addition to the fact that the token coupons contained symbols that might have served as salient cues, what aspect of the experimental procedure may have facilitated correspondence between predicted and actual reinforcement effects for the pictorial choice method?
8. In the present study, reinforcement effectiveness was evaluated for categories of stimuli instead of for individual items. When using this approach, what type of information is unavailable?